

## Chapter 7

# RECOMMENDATIONS

Recommendations from the Lower East Coast Regional Water Supply Plan (LECRWSP) are presented in **Table 7**. Recommendations derived from this plan are presented in **Table 8**.

**Table 7.** Recommendations from the Lower East Coast Regional Water Supply Plan.

Recommendation	Recommendation Number
<b>Northern Palm Beach County Comprehensive Water Management Plan.</b> Develop a Northern Palm Beach County Comprehensive Water Management Plan to identify water management options for this area.	3
<b>Floridan Aquifer System Ground Water Model.</b> Refine the existing Floridan Aquifer System Ground Water Model using data collected from Aquifer Storage and Retrieval studies.	2
<b>Permitting Issues Associated with Aquifer Storage and Retrieval Systems and Reuse of Reclaimed Water.</b> Work in partnership with the Florida Department of Environmental Protection to explore and correct remaining inconsistencies and conflicts among the goals, objectives, and rules of the various programs involved in Aquifer Storage and Retrieval, wastewater and reuse of reclaimed water programs to maximize the reuse of reclaimed water and Aquifer Storage and Retrieval technologies.	15
<b>S-155A.</b> Conduct additional analysis in the design phase of the Comprehensive Everglades Restoration Plan to provide water to the C-51 backpumping and treatment component and provide benefits to Lake Worth Lagoon without affecting the location of S-155A.	18
<b>L-8 Project.</b> Develop an operating schedule that can optimize the use of the stored ASR water to meet EAA demands.	21
<b>Systemwide Operational Protocols.</b> develop a comprehensive set of revised operational protocols that affect the entire SFWMD area and includes the original components of the Central and Southern Florida Project, as well as supplemental project structures constructed by the SFWMD and the Everglades Construction Project.	31
<b>Periodic Operational Flexibility.</b> Develop a process to identify and implement short-term deviations to existing operational protocols that consider all of the existing and proposed components of the regional water management system.	32
<b>Water Reservations.</b> Establish Water Reservations where necessary to assure the public of the availability of water specific to locations for the protection of fish and wildlife or protection of public health and safety.	34
<b>Comprehensive Water Conservation Program.</b> Develop and implement a comprehensive water conservation program to cultivate a water conservation ethic in cooperation with water users, utilities, and local governments to promote more efficient use of the water resources in the Lower East Coast Planning Area.	41
<b>Reclaimed Water System in Northern Palm Beach County.</b> Examine the feasibility of meeting the unmet future demands for irrigation water in northern Palm Beach County and coastal Martin County by conveying reclaimed water from central Palm Beach County.	43
<b>Indirect Aquifer Recharge.</b> Explore the feasibility of recharging primary or secondary canals with wastewater treated to meet Advanced Wastewater Treatment standards in conjunction with a cooperative utility.	44
<b>Water Supply Development.</b> Individual water users should evaluate alternative water supply sources and select the alternative, or combination of alternatives, which best suits local conditions. The SFWMD will continue to evaluate consumptive uses for their impacts on both the regional system and local resources on a case-by-case basis.	46

**Table 8. Recommendations Derived from This Plan.**

<b>General Recommendations</b>	<b>Major Plan Goals * Addressed</b>
Increase storage and conveyance of surface water within and between the respective basins.	ws
Improve water quality through appropriate use of wetlands for water storage and treatment.	wq
Protect and enhance environmental resources by protecting and restoring hydrology of rivers and wetlands.	er
Provide additional water for urban and agricultural use.	ws
Optimize surface water management in the region for water supply, flood protection and ecosystem management purposes.	ws er fc
Develop formulas, operational protocols and agreements needed for facilities that will provide a more equitable balance between environmental and water supply benefits in Grassy Waters Preserve and Loxahatchee Slough.	ws er
Develop a comprehensive funding strategy to implement the recommendations in this plan.	All
Effectively coordinate projects identified in this plan with ongoing and future efforts by other agencies, counties, local governments and private interests.	All
Develop alternative water supplies, such as reclaimed water to reduce dependence on, and use of, regional water sources.	ws er
<b>Specific Recommendations</b>	
Construct 48,000 acre-feet of storage provided by a single or multiple reservoirs located in either the Southern L-8 Basin and/or the C-18 Basin.	ws fc
Continue to support the development and implementation of the L-8 General Reevaluation Report (L-8 GRR).	ws wq
Develop 50 mgd of aquifer storage and recovery (ASR) capacity.	ws
Increase the conveyance capacity of the M-Canal up to 450 cfs.	ws er
Construct a replacement for the West Palm Beach C-2 Structure with a capacity of 400 cfs.	ws
Implement an additional 10 mgd of reclaimed water reuse to meet current and future irrigation demands and environmental needs in the northern Palm Beach County area.	ws
Develop and implement a Regional Reclaimed Water Master Plan.	we
Provide up to 150 cfs of conveyance capacity from the Grassy Waters Preserve to the C-18 Canal Basin.	er
Construct a structure, G-161, in the form of a flowway/culvert system at Northlake Blvd. that will allow the conveyance of water from the Grassy Waters Preserve to the Loxahatchee Slough.	er
Backpump excess stormwater in the C-17 Canal Basin into a 550-acre STA, that will discharge to the Grassy Waters Preserve.	wq ws er
Construct G-160, the Loxahatchee Slough Structure, to provide precise discharge of in the 0-100 cfs range and coarser discharge up to 500 cfs.	er
Improve surface water management and conveyance to provide additional recharge to the Town of Jupiter wellfield to prevent saltwater intrusion.	ws wq
Reroute stormwater discharges from the Old Marsh and Eastpointe development into the Loxahatchee Slough, east of the C-128 Canal, to facilitate storage in the slough. The Mirasol development will receive the stormwater discharges from Old Marsh and Eastpoint, which will be routed through the Mirasol stormwater management system prior to conveyance to the slough.	ws er wq
Develop technical criteria and adopt a Minimum Flow and Level Rule and a Recovery and Prevention Strategy for the Loxahatchee River and Estuary.	er
Develop and implement reservations of water for the Northwest Fork of the Loxahatchee River.	er

\* ws=water supply; fc=flood control; wq=water quality; er=environmental resource management

## **WORKING DRAFT OF THE IMPLEMENTATION SCHEDULE**

### **Phase 1 - One Year (April 2001 through March 2002)**

Identify improvements that can be implemented within one year (by July 2002) to deliver 10 to 20 cubic feet per second (cfs) to the Northwest Fork of the Loxahatchee River during dry periods. The ability to provide water from the Grassy Waters Preserve to the Northwest Fork without significantly lowering the stage in the preserve is severely limited by the City's current pumping capacity from the L-8 Canal into the M-Canal (and subsequently into the preserve). Based on recent observations and depending on the severity of the dry conditions (normal dry season versus drought) the pumping capacity only exceeds demands by 10 to 20 cfs.

- Install new culverts under the entrance road into the Grassy Waters Preserve Southern Nature Center to reestablish this conveyance.
- Perform maintenance consisting of invasive removal, excavation and grading to clear out obstructions and allow approximately 20 cfs of flow from the eastern perimeter canal to the three western 72-inch diameter culverts under Northlake Boulevard.
- Evaluate the constraints imposed by ground surface elevations, existing roads, existing buildings, and existing control structures on the ability to route water from the north side of Northlake Boulevard (at the existing three 72-inch culverts and eastward) to the box culverts under the Bee Line Highway (State Road 710), which includes evaluating both the constraints and conditions of Control 5, the structure that controls flow of water from the north side of Northlake Boulevard to the east.
- Implement the L-8 Pilot Project, evaluate the results and determine future actions needed.
- Evaluate further improvements that may be needed as a result of increasing Loxahatchee Slough hydroperiods. These include evaluation of the integrity of the berms confining the slough (e.g., PGA Boulevard), potential drainage impacts caused by raising the tailwater level of the PGA's Preserve discharge weir, drainage at the Palm Beach Gardens Municipal Golf Course, and the retrofit of the existing dike at Old Marsh. South Florida Water Management District (SFWMD) staff are currently evaluating a transitional period of approximately 3-5 years to allow gradual changes in vegetation and refinement in operational criteria. During the first years of this transition, existing boards and berms may have to remain in place, to maintain higher water levels in the portion of the slough located west of the south leg of C-18

Canal, until the hydroperiod of the eastern portions of the slough reaches a similar level.

## **Phase 2 - Three Years (April 2001 through March 2004)**

Implement the following improvements to improve the flow capacity for both dry and wet conditions:

- Construct Loxahatchee Slough Structure (G-160).
- Increase flow capacity from M-Canal to the three existing 72-inch culverts by removing biomass accumulation and establish canoe paths. These improvements will allow a total flow capacity of approximately 30 cfs.
- As required, modify existing structures to provide conveyance and water quality enhancement (north of Northlake Boulevard) including but not limited to the following:
  1. Modify or remove Control 5.
  2. Construct a spreader swale north of, and parallel to, Northlake Boulevard.
  3. Remove, breach, or construct culverts through berms or other obstructions.
  4. Construct an enhanced flowway and preferential flow path as needed to accommodate both dry and normal wet-weather flows and large stormwater flows without significant damage to the flowway area while maintaining the required level of drainage.
- Replace the Central and Southern Florida Project C-18 Basin Culvert 9 and others as required to facilitate both interim and long-term hydroperiod enhancement.
- Develop a project management plan (PMP) and project implementation report (PIR) for Part 1 components of the Comprehensive Everglades Restoration Plan (CERP), North Palm Beach County Project.
- Implement the PIR and prepare general design memorandums (GDMs) for Part 1 components of the North Palm Beach County Project.
- Conduct additional supplemental testing of the L-8 Pilot Reservoir, if necessary.

### **Phase 3 - Five Years (April 2001 through 2006)**

Implement the following improvements to substantially increase subregional conveyance capacity and provide a backbone for the final water distribution system required by both the CERP and the LECRWSP:

- Construct the M-Canal Pump Station (C-2) and canal conveyance improvements.
- Install Northlake Boulevard culverts and gates (G-161) and enhanced flowway.
- Prepare CERP Design Documentation Memorandums (DDMs) for the following projects arising from the Northern Palm Beach County PIR:
  1. C-51 and Lake Worth Lagoon sediment removal
  2. L-8 and C-51 Reservoir or reservoirs
  3. Acquisition and restoration of 3,000 acres to enhance the hydroperiods and minimum flow to the Northwest Fork of the Loxahatchee River
  4. C-17 backpumping, including hydraulic improvements (e.g., pump stations and canal conveyance) and water quality treatment provided by a new stormwater treatment area (STA)
  5. C-51 backpumping, including hydraulic improvements (e.g., pump stations and canal conveyance) and water quality treatment provided by a new STA
  6. Other conveyance and water availability increasing improvements such as:
    - a. Installing a pump station to collect high quality runoff from the J.W. Corbett Wildlife Management Area, which is discharged to C-18 Canal, for storage in Loxahatchee Slough
    - b. Creating conveyance from the southeastern portions of the J.W. Corbett Wildlife Management Area to the west leg of the C-18 Canal
    - c. Improving conveyance to the perimeter canal of the Grassy Waters Preserve
    - d. Improving conveyance from the south of Northlake Boulevard to the C-18 Basin
    - e. Providing conveyance, structural (e.g., operational control gate for the lateral canals of Jupiter Farms) and operational changes

to improve water management capabilities in South Indian River Water Control District (SIRWCD) and Pal-Mar areas

### **Phase 4 - Comprehensive Everglades Restoration Plan (CERP) North Palm Beach County Project Part 1 (April 2001 to 2014)**

Improvements to substantially increase subregional storage capacity and expand the water distribution system to meet the year 2050 needs:

- Remove sediments from C-51 and Lake Worth Lagoon.
- Construct L-8 and C-51 reservoir or reservoirs.
- Restore 3,000 acres to enhance hydroperiods and minimum flows to the Northwest Fork of the Loxahatchee River
- Construct C-17 backpumping system and STA.
- Construct C-51 backpumping system and STA.
- Construct conveyance and increased water availability improvements such as the following:
  1. A pump station to collect surplus high quality runoff from the J.W. Corbett Wildlife Management Area, which is discharged into the C-18 Canal, for storage in the Loxahatchee Slough
  2. Conveyance from the southeastern portions of the J.W. Corbett Wildlife Management Area to the west leg of the C-18 Canal
  3. Conveyance improvements to the perimeter canal of the Grassy Waters Preserve
  4. Conveyance improvement from south of Northlake Boulevard to the C-18 Basin
  5. Conveyance and operational changes to improve water management capabilities in the SIRWCD and Pal-Mar areas

### **Phase 5 - Comprehensive Everglades Restoration Plan (CERP) North Palm Beach County Project Part 2 (April 2001 to 2014)**

- Implement PMP, PIR, and GDM for C-51 and L-8 Basin aquifer storage and recovery (ASR) (Year 2005 through 2010).
- Prepare a DDM for construction of C-51 and L-8 Basin ASR (2010 through 2012).
- Construct C-51 and L-8 Basin ASR facilities (2012 through 2020).